Before the

Federal Communications Commission

Washington, DC. 20554

In the Matter of	)	
	)	
Spectrum Efficiency Improvement in	)	Private Radio Docket
the PLMR bands below 512 MHz and	)	No. 92-235
the Replacement of Part 90 by Part 88	)	
	)	

To: The Commission

COMMENTS OF LENEXA, KANSAS POLICE DEPARTMENT

With great interest, this department has watched the proceeding of the Notice of Inquiry and the subsequent Notice of Proposed Rulemaking regarding the issue of spectrum efficiency improvement in the Private Land Mobile Radio bands below 512 MHz. Our department staff has committed substantial time and effort to reviewing the proposed Part 88 document and gathering ideas about its impact from sources including commission releases, trade publications, trade association meetings, and conversations with commission staff, and representatives from a variety of other public safety and government agencies including local, county and state radio system users. From these information sources and our own internal discussions we have fashioned the following comments for your consideration.

Generally, we believe that the proposed rulemaking will severely constrain and adversely affect land mobile operations to which the City of Lenexa, Kansas is a licensee or a participating user. Too, acceptance of the Part 88 Rules and Regulations, as proposed, will impose a financial burden on this department and provide a logistical impediment to continued department operations. We further realize that, at least on the surface, the NPRM portends to ostensibly laudable goals, so for many portions of the NPRM with which we are in disagreement we have offered some alternative proposals for your consideration.

The stated goals of the NPRM have evolved to four salient points:

1. Create more radio channels for users in the affected bands.
2. Reduce spectrum congestion in the affected bands.
3. Promote more efficient use of the radio spectrum in the affected bands.
4. Simplify the rules for license holders and applicants.

The Commission proposes to "add" channels by more stringent and intensive channel re-use and by further dividing the radio spectrum into thinner slices (occupied channel bandwidths.) As proposed in the NPRM, this creation of channels would be an evolving process, the first step of which would be the reduction in occupied bandwidth of all PLMR licensees by 1 January 1996. This first benchmark date would require affected licensees to reduce their transmitter deviation to +/- 3 kHz. Two immediate consequences are readily foreseeable: First, each PLMR two-way radio would require bench time for a technician, either manually or through computer interface, to adjust and test the deviation of every radio transmitter. Assuming a realistic throughput of three radios per hour, including documentation preparation and record filing time, this department alone could incur a compliance cost of over $3,500.00 assuming no additional billable repairs were required for the affected radios. Citywide, our compliance cost could exceed $10,000. The second effect of this deviation reduction would be the corresponding system range reduction of from 15-30%. Ours is a small suburban police department with limited resources but, like most other suburban public safety departments, is obliged, by virtue of enforcement interoperability and

criminal "migration," to provide radio coverage throughout the entire metropolitan area. Simply stated, we would be required to spend up to $10,000.00 to have our system modified to operate less reliably and effectively. Such a reduction in system performance of 15-30% would pose a severe hardship to continued efficient operation of this department and the continued safety of its sworn officers.

The second aspect of "adding" channels involves the implicit belief that more channels are universally needed. It is our sense that this channel need follows population density so that, while in growing urban and metropolitan areas more channels may be needed, in outlying suburban and rural areas there is no actual channel shortage. This apparently simplistic observation shouldn't be ignored when viewed in the context of coupling the implementation of proposed stringent and restrictive HAAT and ERP technical standards with the requirement for technological migration to a new generation of very narrowband (5 or 6.25 kHz) channels. Restating, it is our opinion that circumstances would seldom require implementing the proposed contour-based HAAT and ERP standards which would facilitate channel re-use in nearby (typically within 50 miles) areas, since, paradoxically, spectrum relief may not really be needed in those distanced areas.

The third aspect of "adding" channels directly relates to the proposed HAAT and ERP technical changes alluded to in the paragraph above. A simple practical example would illustrate our concern. Kansas City, MO Fire Department operates a 375 watt base station which is located atop their city hall. Under the proposed rules, and using their same antenna, they would be required to reduce power to 7-1/2 watts. We are fairly certain that their operation would be compromised. In our own situation, from Table C-3 we find that our main police transmitter would require power reduction from 100 watts to about 35 watts, a nominal 4.5db reduction which we feel would substantially impair the continued safe and efficient operation of this department. A collateral issue is the signal interference that would be received from users on channels contiguous to PLMR spectrum blocks who would not be affected by the adoption of 92-235. In particular, we would be

bound to lower transmitter power and occupy narrower channels using existing radio equipment for some time but would continue to be subjected to and specifically not protected from the interference of continuing high power (typically 1kW ERP) RCC users who would be completely exempted from the entire (92-235) proceeding. We feel this prospect for worsening interference would pose an untenable burden on this department.

The fourth aspect of "adding" channels involves closer channel spacing, use of narrowband channels and the attendant technological migration proposed by the Commission. Based on our direct queries of both Motorola and Ericsson-General Electric, two major suppliers of public safety radio equipment, we are satisfied that the proposed 5 kHz and 6.25 kHz spacings will prove technically unworkable. Perhaps ultimately a compression technique or coding technology will be devised to allow narrowband operation equivalent to present modal attributes, but that has not been indicated to us. Accordingly, we feel that at this time it is wholly inappropriate for the Commission to mandate a technological change when there is not sufficient evidence to suggest to the framers of Part 88 that such a configuration could even be practically implemented.

Our own proposal to allow the addition of channels is oriented to the individual PLMR radio services. We believe that the individual frequency coordinators and associations specifically representing the user eligibles should direct the "refarming" of available blocks of spectrum on an "as needed" basis very probably determined by geographic or zone assignment. For instance, users in a given geographic area (typically a state) would work within the framework of their user association to chart specific modal zones which would either be high-density or low-density use. In this way the majority of system users would be spared the immediate adverse effects of Part 88

However, this "new technology" should not mandate the extremely close spaced, narrow bandwidth channels proffered in Part 88. Rather, any new channel assignments should be on 12.5 kHz and 15 kHz centers for the UHF and VHF bands respectively and should come from within spectrum blocks already assigned to specific radio services.

We anticipate these effects of our proposal:

1. Equipment and technology is currently available so those users desiring to move to avoid congestion could begin doing so immediately.
2. It is important to relieve the unreasonably restrictive HAAT and ERP requirements (the mechanism for re-use of channels nearby) on the majority of users who would not receive any needed spectral benefit from the intended consequences of the limitations and who could suffer system degradation by their forced implementation..
3. The Commission would direct future system configuration on these "new" channels by tying or conditioning channel grant to three main criteria:
    A. Use by licensees of spectrum efficient operation.
    B. Achievement by licensee of prescribed channel loading standards.
    C. Implementation of "new technology" system equipment.

We feel that the marketplace commercial and technological forces will allow public safety eligibles to migrate to new systems at their own pace and, ultimately, at only a moderate cost. This migratory pace would typically be driven by the agencies own perception of the cost-benefit value of such a move. Using proposed digital technology the value addition offered by the various manufacturers would be in their unique ability to manipulate the digital data stream to provide expanded system features which is, again, a commercially driven achievement.

Reduced spectrum congestion would result as a natural consequence of some of the proposed mitigation techniques to "add" channels such as modification of technical operating parameters and

would be supplemented by use of the proposed Exclusive Use Overlay. For public safety users, though, there really are only types of spectrum congestion: nuisance interference and signal interference. The first, nuisance interference, typically results from receipt of co-channel radio signals on non-coded receivers. Nuisance interference is annoying but does not substantially impede use of the radio communication system as an operational tool of public safety service provision. Typically, nuisance interference can be abated by application of any of several receiver coding techniques. However, the second and more serious effect of spectrum congestion is signal interference which, while either audible or inaudible (through receiver code-exclusion,) does result in impeded system operation with the attendant potential for public safety service delivery interruption. Mitigating signal interference requires an actual reduction in received interference signal strength. Such a reduction can be accommodated by various means including moving one party to a less crowded channel or by implementing site-specific HAAT and/or ERP limits. Blanket application of such restrictive limits, as mentioned above, would negatively affect most and positively affect only a few users. Our feeling is that channel congestion (presence of signal interference) can best be mitigated by providing a marketplace mechanism to allow, not force, migration to "new" channels. Hence, relief from channel congestion is in consort with relief for expanded channel operation: upon determination of their own needs user eligibles may (not must) migrate to "new" channels.

More efficient use of the available spectrum should be important to all the PLMR eligibles. We feel that spectrum-conserving techniques, such as trunking, are vital to enhancing the use-density of the available spectrum. Too, we believe that commercial competition will facilitate marketplace introduction of more spectrum efficient radio equipment. We think that the Commission should embrace both of these development techniques but not directly mandate the mechanics of their implementation.

Finally, the presumably simplified rules governing licensees and eligible applicants would be the document presented as Part 88. Along with other rules changes, the Commission offers a radical change in the way we, as public safety agencies, would be represented to the Commission. In this regard, we feel it is important that the Commission understand our perspective as a public safety service provider. We have always tried to operate within the framework of the FCC Rules and Regulations and we feel that this department and the other city agencies for whom we provide communication services are not impeded by any of the Part 90 rules. Indeed, it is vitally important to us to continue to have access to a frequency coordination system which does specifically represent our interests. We feel that allowing PLMR users to "shop" for frequency coordination will ultimately lead to unresolved disputes and widespread congestion and interference to which there will not be a ready remedy. Accordingly, we strongly encourage the Commission to continue partitioning the PLMR spectrum into individual service oriented blocks and further to continue allowing associations or groups who specifically represent the interest of the affected eligibles, in our case APCO, IMSA, AASHTO, and FCCA, to continue to administer frequency coordination.

To address another aspect of the proposed rulemaking, this department is opposed to allocating valuable radio spectrum to applicants formerly ineligible in any of the PLMR services. We see the proposed wide-area licensing, along the geographic boundary lines of the seven RBOC's, as a thinly veiled effort to add an entirely new class of PSTN interconnected communication providers (otherwise known as common carriers) into the, by the Commission's own admission, already crowded PLMR bands of the radio spectrum at the expense of spectrum allocations to, among other eligibles, the public safety providers.

Thank you for your consideration of our comments regarding the proposed sweeping changes outlined in Part 88. If we can be of assistance to you in any way in this matter please feel free to call on us.

Respectfully Submitted,

Ellen T. Hanson
Chief of Police
Lenexa Police Department
12500 W. 87th St. Parkway
Lenexa, KS 66215

PH: 913-888-4110
FX: 913-888-8690

Comments Submitted May 27, 1993